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A Study of Burn Deaths in North Karnataka

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ABSTRACT

Background: This is an epidemiological profile of the burn fatalities brought to the morgue of Bidar Institute of Medical Sciences & Teaching Hospital Bidar. The study explores the incidence, age-gender distribution, time of occurrence, place of occurrence, socio-economic status, survival period, place of death, cause of death, body surface area involved, manner of death and monthly distribution. From the observations and analysis, certain etiologies are elicited and their preventive measures are suggested.

Key Words: Burn, death, cause of death.

INTRODUCTION

Homicidal burning of married women in India is a major concern for the Government, law-enforcing authorities, the judiciary, the police and medico legal experts all over the country who are associated with dowry disputes. Dowry death, a heinous crime is gradually engulfing and polluting the entire society. To know the trend of the changing profile this study has been taken up.

MATERIAL AND METHOD

A study of the burn cases that were brought to the morgue of Bidar Institute of Medical Sciences & Teaching Hospital Bidar to conduct the autopsy. It is a prospective study conducted for a period of one year from January 2008 to December 2008. The data and information gathered for 65 cases were analyzed. A predesigned pro-forma used to collect the information on demographic, like age and sex of the deceased, the venue and time of sustaining burn injuries, socio-economic status of the victims, body surface area involved, survival period and cause of death, circumstances of burns, etc. from the autopsy records and inquest report. The findings are tabulated in various tables to analyze the whole picture.

OBSERVATIONS

During the period of study (January 2008 to December 2008) a total of 480 medico legal autopsies are conducted by the Dept. of Forensic Medicine, Bidar Institute of Medical Sciences & Teaching Hospital Bidar, out of which 65 deaths are due to burns. There is no regular pattern in the incidence of burns over the study period. Regarding the gender distribution males are

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preponderance (Male-50.76% and female-49.23%) (Table-1). The age group most involved is 21-30 yrs with an incidence of 38.46%, which is more in females. There is no case reported above 60 yrs. (Table-1). Among the 53.84% of cases the burn injuries sustained during daytime (Table-2). Regarding the venue the maximum 24.61% incidence occurred at husband's house (Table-3). Most of the victims about 53.84% belonged to lower socio-economic strata (Table-4). Maximum percentage of victims survived for less than 1 hr (49%) and 21.53% are survived for more than one week (Table-5). The 50.76% victims died in the hospital whereas 49.23% at the site of occurrence (Table-6). The cause of death in the maximum cases is shock due to burn (67.69% cases) and 14% died due to toxemia (Table-7). Taking the body surface area involved into consideration it was observed that in about 73.84% cases the more than 80% body surface area is involved (Table-8). However, in 4 cases the death was due to smoke suffocation.

Most of the cases are accidental in nature (35.38%), followed by homicidal (29.23%) and suicidal (24.61%). There is a case of self immolation as a protest against the Armed Forces Special Powers Act (Table-9). Highest incidence (32.30%) is seen in the month of January (Table-10).

Table 1: Age-gender distribution

Age in Years	Male (%)	Female (%)	Total (%)
<10	2 (6.06)	3 (9.37)	5 (7.69)
11-20	5 (15.15)	9 (28.12)	14 (21.53)
21-30	9 (27.27)	16 (50)	25 (38.46)
31-40	12 (36.36)	3 (9.37)	15 (23.07)
41-50	2 (6.06)	1 (3.12)	3 (4.61)
51-60	3 (9.09)	0 (0)	3 (4.61)
>60	0 (0)	0 (0)	0 (0)
Total	**33 (50.76)**	**32(49.23)**	**65**

Table 2: Time of occurrence of Incidence (N=65)

Day		Night	
No	%	No	%
35	53.84	30	46.15

Table 3: Place of occurrence of incidence

Place	Male (%)	Female (%)	Total (%)
Quarter	4 (12.12)	4 (12.5)	8 (12.30)
Own/rented hose	5 (15.15)	8 (25)	13 (20)
Husband's house	0 (0)	17 (53.12)	17 (26.15)
Shop	2 (6.06)	1 (3.12)	3 (4.61)
Work place(hotel)	2 (6.06)	0 (0)	2 (3.07)
Paddy field	1 (3.03)	0 (0)	1 (1.53)
Roadside	13 (39.39)	0 (0)	13 (20)
Master's house	0 (0)	1 (3.12)	1 (1.53)
Bazaar	3 (9.09)	0 (0)	3 (4.61)
Misc.(Riot)	2 (6.06)	2 (6.25)	4 (6.15)
Total	33 (50.6)	32 (49.23)	65 (100)

Table 4: Socio-economic status

Socio-economic status	Male (%)	Female (%)	Total (%)
High	01 (3.03)	03 (9.37)	04 (6.15)
Middle	19 (57.57)	07 (21.87)	26 (40)
Low	13 (39.39)	22 (68.75)	35 (53.84)
Total	33 (50.76)	32 (49.23)	65 (100)

Table 5: Period of Survival after incidence

Period	No. of cases	%
<1 hr	32	49.23
1-24hrs	11	16.92
24-48 hrs	02	0.30
2-3 days	01	1.53
3-7 days	05	7.69
>1 week	14	21.53
Total	**65**	**100**

Table 6: Place of death

Place	No. of cases	%
Hospital	33	50.76
Burn site	32	49.23
Total	**65**	**100**

Table 7: Cause of death

Cause of death	**No.**	%
Burn shock	44	67.69
Toxaemia	09	13.84
Septicaemic shock	04	6.15
Acute tubular necrosis	01	1.53
Complications	02	3.07
Smoke suffocation	04	6.15
Total	**65**	**100**

Table 8: Body surface area involved

Area	**No.**	%
0%(only smoke suffocation)	04	6.15
<30%	00	00
31-40%	00	00
41-50%	00	00
51-60%	05	7.69
61-70%	02	3.07
71-80%	06	9.23
>80%	48	73.84
Total	**65**	**100**

Table 9: Nature of death

Nature	No.	%
Suicidal	16	24.61
Homicidal	19	29.23
Accidental	23	35.38
Riot	05	7.69
Self-immolation(AFSPA)	01	1.53
Unknown	01	1.53
Total	**65**	**100**

Table 10: Monthly distribution

Month	No. of cases	%
Jan	21	32.30
Feb	3	4.61
Mar	4	6.15
April	1	1.53
May	8	12.30
June	3	4.61
July	6	9.23
Aug	4	6.15
Sept	3	4.61
Oct	4	6.15
Nov	5	7.69
Dec	7	10.76
Total	**65**	**100**

DISCUSSION

Dowry death is not traditionally prevalent in North Karnataka. However, sporadic instances of burn deaths of newlywed women suggest the possibility of a sinister trend slowly creeping into an erstwhile placid society. Slight male preponderance was observed. This may be because males are generally more active and involved in activities of all kinds. But the difference is not much. Females are not far behind and mainly comprised.

The age group most involved was 21-30 yrs with an incidence of 38.46%, which was more in females. Taking the place of occurrence into consideration 24.61% occurred in the husband's house. These observations are in conformity with other studies from the various regions of India[2-10] and in contrast to the studies from other developing and the developed countries[11 -16]. More than half of victims (53.84%) were sustained burn injuries during daytime. This may be due to the fact that people are usually occupied in their work during daytime and therefore the burns are sustained in the course of their activities.

The majority of victims those were sustained more than 80% burns were survived for less than one hour. Most cases were accidental followed by homicidal and suicidal burns.

Among those who die in suspicious circumstances, family quarrels and marital disharmony are the two important predisposing factors. Illiteracy, arranged marriage, joint family structure, unemployment, economic dependence of the husband on the parents, complete dependence of the women on their husband and in-laws and lack of social security were other contributory factors affecting the incidence in some way [17-20]. This is supported by the observation that 53.84% of the victims in our study belonged to low socio-economic stratum and also that 24.61% occurred in the husband's house which was the maximum among the studied categories. Most of the cases occurred in January. This may be due to use of fire for warming during winter.

CONCLUSION

Burn injuries have been a major cause of concern since prehistoric days to the present era of modern medicine. However, the general belief that burns usually occur at the two extremes of age, indicating the accidental nature of infliction does not hold true in the present Indian setup where the majority of reported cases belongs to second or third decade of life. However, the female preponderance in the ID-20, 21-30 yrs age groups. It could be a strong reason to start thinking of the sneaking intrusion of dowry harassment in a traditionally non-dowry oriented society.

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